

Guide to the Lichens of the New York Area—Part 6

G. G. NEARING

Group 7—continued

Solorina saccata. DIMPLED LICHEN

This northern lichen is rare in the New York area, but has been found growing on the ground in the Helderbergs, near Albany. It looks like a brown *Sticta* or *Peltigera*, into which someone has pressed the round end of a bullet here and there, then colored the smooth, cup-like depressions reddish brown. These peculiar sunken fruits are unlike any other lichen, except the smaller *Heppia Despreauxii* (Group 13), and as the species is usually fertile, no further description is needed to determine it. Sometimes the lichen is reduced to a mere rim 2 or 3 mm. wide around its sunken fruits.

Peltigera. Leather Lichens having the downy under surface marked by thickened, often darkened veins. The fruits form on the upper surface of special lobes which project from the tips. Spores are brownish until mature, when they become colorless.

Peltigera canina. DOG LICHEN

Found everywhere growing on the ground or over mosses on tree-roots and rocks. It reaches best development in the dense shade of damp woods, or on stream-banks, but may also be seen in dry, open places, exposed to full sun. It spreads in regular or irregular rosettes as much as 50 cm. or more across, with branches and tips sometimes 4 cm. wide. The tips often rise 2 or 3 cm. clear of the foothold. The upper surface is leather-brown or gray, greenish when moist, blackish in winter, rather smooth, but with small hairs scattered inconspicuously. Or the margins and other parts may be covered with tiny lobes and coral-like growths, or with soredia (in the subspecies). The under surface is downy, white to brown, more or less covered with a network of thickened, white, brown or blackening veins. From these veins spring similarly colored, cottony holdfasts, often 1 cm. long and frequently much thickened and branched. Algal cells said to be *Nostoc* or *Gloeocapsa*, but difficult to determine.

Fruits are not uncommon, usually renewed every summer, maturing in autumn. The special, narrow lobes spring upward from the tips, at first curling to form a hood over the young fruits. Later the fruits become flat on the upper surface of their lobes, and often finally roll into a cone with the chestnut-brown or blackening fruiting surface outward. Spores when mature, colorless, 4- to 8-celled, extremely variable in size, but usually 40 to 70 by 3 to 5 microns.

Peltigera canina when fruiting will hardly be confused with any other lichen except its own subspecies, which may be ignored, or separated as indicated in following paragraphs. From *P. aphthosa*, a distinct species, it may be distinguished by the color, remaining brown, gray or dark olive green when wet; also by the absence of peculiar small, fruit-like bodies scattered over the upper surface, described under that species. *P. aphthosa* and *P. venosa* have the algal cells Protococcus. From species of *Sticta* and *Nephroma*, it can be separated by the thickened veins, though there are forms of the subspecies *P. malacea* in which the brown veins are so closely interlaced that they seem to lose their identity, and the pale spaces between them appear like the speckling of a *Sticta*. These rare forms cannot be determined surely unless fruits are present. Associated with *Peltigera canina* along stream beds will be found *Dermatocarpon aquaticum* (Group 12), smaller in its parts, and turning rather bright green when wet. In texture it is rather leathery, but there are no thickened veins beneath. *Hydrothyria venosa* (Group 11), a blackish lichen often found under water, has veins beneath, but is thin and delicate, and gelatinous looking when wet. *Leptogium saturninum*, a slate-gray gelatinous lichen of Group 11, is clothed on the under surface with a nap of rather long, fine hairs, but has no veins. Few other lichens could cause confusion, especially as the larger forms are the largest of all our papery lichens.

The subspecies of *Peltigera canina* are unsatisfactory and inconstant in their characters, but are here briefly described for those who wish to study them.

Peltigera horizontalis is a subspecies with shortened fruit-lobes, often so short that the fruits appear to rest on the pointed tips rather than on special lobes. They are flat, broader than long, and held in a more or less horizontal position, instead of pointing up-

ward as in typical *P. canina*. The spores, only 4-celled, and 30 to 48 by 5 to 8 microns, are shorter and broader than in other subspecies, whose spores are rarely shorter than 40 or broader than 6 microns. The conjunction of all these characters is rare, but forms of *P. canina* will often show one or more of them.

Peltigera polydactyla appears to have been named for its clustered, slender fruit-lobes. Its spores also are longer than in other subspecies, 60 to 100 by 3 to 4 microns. Unfortunately the two characters are seldom associated, and there appears to be no sound foundation for the name.

Peltigera scutata is a subspecies having margins dotted with gray soredia or divided into coral-like growths. Otherwise not different from *P. canina*.

Peltigera malacca is a subspecies with the under surface mostly brown, and the veins so run together as to be hardly distinguishable. Toward the tips, small, pale spaces, showing between, suggest the speckling of *Sticta scrobiculata*, and specimens not in fruit are sometimes mistaken for the *Sticta*, even by expert lichenists. The spores are 50 to 72 by 4 to 6 microns, being broader than in any other subspecies except *P. horizontalis*. They are divided into 4 or 6 cells, but never into 8, as most of the forms often are. These characters are not usually associated, and there seems little foundation for the name.

Peltigera rufescens is a subspecies hardly distinguishable from *P. canina*, with narrow lobes and crinkled margins. The under surface is brown, with darker brown veins.

Peltigera spuria, also called *P. canina* var. *spuria*, is merely a depauperate form, probably due to insufficient shade and moisture. It is usually pale gray, with rather small, usually blackish fruits. The under surface is whitish, with whitish veins and holdfasts. These characters are not particularly distinct, but there is an extreme form, *P. spuria* var. *sorediata*, also called *P. erumpens*, that requires separate description. Instead of the branching, rosette habit of growth, it is often seen as almost unconnected, roundish lobes, with margins curled upward. These may be deeply saucer-shaped, and sometimes less than 1 cm. in diameter. The upper surface may be pale gray or brownish, spotted with oval patches of blue-gray, granular soredia, each up to 5 mm. across. The under surface is whitish, with a few whitish veins and holdfasts. It will

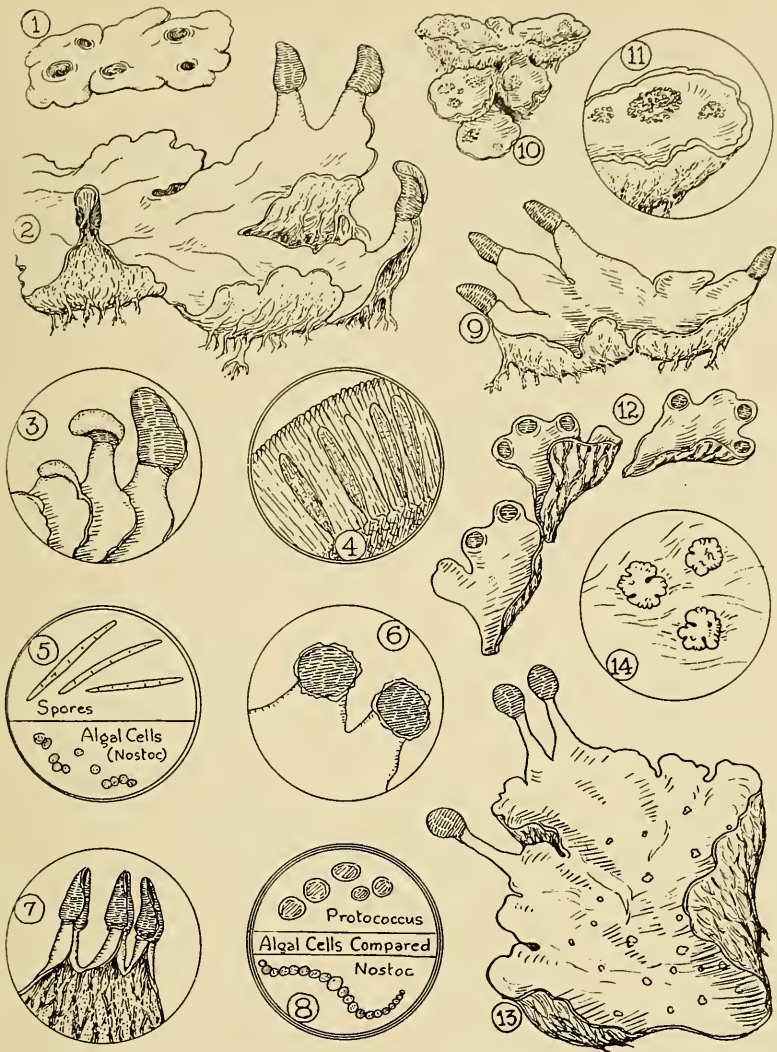


PLATE 10

- Fig. 1. *Solorina saccata*, brown.
 Fig. 2. *Peltigera canina*, leather-brown or gray.
 Fig. 3. *P. canina*, fruiting lobes showing progressive stages of development.
 Fig. 4. *P. canina*, section of spore layer.
 Fig. 5. *P. canina*. spores.
 Fig. 6. *P. horizontalis*, fruiting tips.
 Fig. 7. *P. polydactyla*, under surface and fruiting lobes.
 Fig. 8. Algal cells, Protococcus and Nostoc.
 Fig. 9. *Peltigera spuria*, whitish or pale gray.
 Fig. 10. *P. spuria* var. *sorediata* (*P. crumpens*), with blue-gray, granular soredia.
 Fig. 11. *P. spuria* var. *sorediata*, tip.
 Fig. 12. *P. venosa*, gray or brownish.
 Fig. 13. *P. aphthosa*, gray or brown, bright green when moist.
 Fig. 14. *P. aphthosa*, cephalodia.

be seen rather commonly in exposed rocky fields, on the ground or sometimes on rotten wood, or scattered over mosses. At first sight it would hardly be associated with *Peltigera*, but the downy under surface with thickened veins shows its relationship, and serves to distinguish it from *Dermatocarpon miniatum* (Group 12) which has a dark under surface with no down nor regular veining.

Peltigera venosa. FAN LICHEN

Found only occasionally growing on the ground. It is not a rosette-shaped lichen, but consists of irregular, isolated fans, usually less than 2 cm. across, the tips lifted as much as 1 cm. above the soil. The upper surface is smooth, greenish gray or sometimes brownish, the under whitish, conspicuously marked with radiating, dark brown, thickened veins, somewhat downy. Algal cells Protococcus.

Fruits are frequent, reddish brown, nearly circular, placed on short lobes, or merely on the upper surface of the fans, close to the undulating margins. Spores colorless when mature, 4-celled, 28 to 46 by 6 to 10 microns.

Peltigera venosa is easily distinguished from other species of *Peltigera* by its small size and fan-like shape, and from all but *P. horizontalis* by the roundish fruits held nearly horizontal on very short lobes. From *P. spuria*, also of small size, and sometimes consisting of scattered lobes, it is marked by the dark veins of the under surface, those of *P. spuria* being white or very pale gray. The presence of Protococcus, the bright green algal cells, distinguishes *P. venosa* from the other species except *P. aphthosa*. No other lichen could easily be confused with it.

Peltigera aphthosa. STUDED LEATHER LICHEN

Growing in deep woods, on mossy banks or rocks, usually at high elevations, but nowhere common. It spreads in irregular rosettes 20 cm. or more across, with lobes up to 5 cm. wide. The upper surface is smooth or wrinkled, olive-green, leather-brown or gray when dry, apple green when moist. The under surface is downy, pale brown or buff, with prominent dark brown or blackish, thickened veins, and ragged holdfasts colored like them. Studded over the upper surface are darkening gray, roundish bodies called

cephalodia, up to 1 mm. in diameter, with radiating teeth along the edge. Algal cells free (Protococcus).

Fruits borne on the tips of special, narrow lobes, and may be somewhat rolled or flat, up to 8 mm. across, reddish brown. Spores 4- to 8-celled, 45 to 75 by 4 to 7 microns, colorless when mature.

Peltigera aphthosa, at a glance, looks much like *P. canina*, but on close inspection, differs sharply. The cephalodia on the upper surface are unlike any of the growths commonly seen on our Papery Lichens. This is also the only species with thickened veins whose upper surface turns bright green when wet, and unlike *P. canina*, it keeps its color in winter. *Sticta amplissima*, though turning green when wet, has no veins beneath. Few other lichens grow large enough to cause confusion. The Rock Tripes (Group 12) often have dark bodies and black fruits scattered over the surface, but their circular shape, scarcely lobed, and single, central point of attachment distinguish them at once.

(Group 8 will contain the papery species of *Physcia*, including *Anaptychia* and *Pyxine*)

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Pronouncing Lichen Names

W. L. DIX

The recent revival of interest in the study of lichens among members of the Torrey Botanical Club has brought with it the apparent need of some assistance with the pronunciation of the scientific names. This need is all the more real because of the complete lack of any information in any available work on lichens, as well as the absence of common names for most of the species.¹ The following list is an attempt to supply this information for the genus *Cladonia*, and for other lichens as far as they have been described in the helpful articles by Mr. Nearing now being published in *TORREYA*.

Although scientific botanical names are either Latin and Greek derivatives or compounded from those languages, the English pro-

¹ The recent articles in *TORREYA* by Mr. Nearing on Lichens in the New York Area is an attempt to supply this lack of common names.